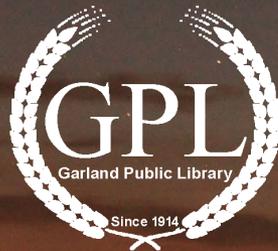


# Welcome

## Garland Public Library's "Night Under the Stars"

(Telescopes provided by the Bear River Observatory)



(Please watch this 5 minute presentation before visiting the telescopes)

# What is a Starparty?

- Gathering of amateur astronomers for the purpose of observing objects and events in the night sky.
  - Free family friendly activity
  - Learn the science of astronomy as a hobby
  - View stars, planets, nebulae, galaxies and more!



# Starparty Etiquette

- **No white flashlights!**

- Once your eyes have become dark adapted, flashlights are not necessary and it is quite easy to see in the dark.
- Fully dark adapted eyes are nearly 1,000,000 (ONE MILLION) times more sensitive to faint light than eyes recently exposed to bright white light.
- Eyes can take up to 30 minutes to fully adapt from bright light to complete darkness
- Even brief exposure to white light will completely reset a person's night vision
- Try to arrive before sunset so that car headlights aren't a problem

- **Red lights only!**

- Red light is used by astronomers because it does not completely reset a person's night vision
- A white flashlight may be converted to a "starparty safe" flashlight with a red filter.
- Red cellophane and rubber bands are provided for converting white flashlights into acceptable red ones.
- If necessary, use red flashlights sparingly and always point them down.

# Starparty Etiquette

- Be careful around telescopes

- Do not run near or around telescopes
- Walk slowly
- Do not touch the telescopes. Telescopes are sensitive, touching them may move the telescope away from the object it was looking at. The telescope operator will then have to find the object all over again.
- Keep pets away from telescopes. Even a well trained pet can accidentally knock over equipment
- Keep food and drink away from the telescopes
- Do not smoke or apply insect repellent near the telescopes. These chemicals can adhere to and actually damage the sensitive optical coatings on telescope lenses.



# What should I bring?

- Friends and family!
- Warm clothing
- Chairs and blankets
- Your own telescope or binoculars
- Energy drinks / snacks
- Insect repellent



# What can I see?

- Stars and Constellations
- Telescopes and Equipment
- Satellites & Spacecraft
- Sun, Moon, Planets, Asteroids & Comets
- Nebulae & Clusters
- Stars & Galaxies
- Events (Eclipses, Auroras, Transits, etc...)



# What will I see?

- Have realistic expectations
- You will not see objects in color
- Most objects are faint, fuzzy, and require dark skies, large telescopes, and an experienced observer
- Most images that people are used to seeing are full-color photographs taken with the Hubble Space Telescope. Such images are taken with very large telescopes orbiting in space or from mountaintops above most of the earth's atmosphere. Images like the ones shown below contrast what you can expect to see through these telescopes with what can be obtained with a camera.
- Astrophotography is the most difficult type of photography and a single image often requires more than 10 hours of exposure time on even the most sensitive detectors.
- When looking at an object through the telescope, **TAKE YOUR TIME**. Your eye will reveal more detail the longer you look at it.



HUBBLE SPACE TELESCOPE



BEAR RIVER OBSERVATORY



VISUAL APPROXIMATION

# How do I get started in astronomy as a hobby?

- Astronomy does *not need* to be expensive.
- The most basic tools are your own eyes
- Binoculars are a great way to get started
- Excellent quality telescopes can be made at home with most supplies available from your local hardware store
- Many free resources are available
- Join a local astronomical society
- Go to a starparty!

# Schedule of Events

- Solar Astronomy (7:30 PM – 8:30 PM)
  - **Never look at the sun through a telescope without the proper equipment!**
  - Safe solar viewing with full aperture visible light solar filters
  - Hydrogen-alpha viewing at 656nm
- Star Talk and Constellation Tour (8:30 PM – 9:00 PM)
  - Tonight's sky highlights and where to look
  - Question and answer
- Main Event (9:00 PM - Midnight)
  - Faint deep sky objects
  - Please ask questions!
  - Have fun and enjoy!

\*Astronomy is inherently a weather dependent activity. Events are always "cancelled" due to excessive clouds, rain, or other inclement/stormy weather.